1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name: N-[6-[(7-nitro-2-1,3-benozadiazol-4-yl)amino]hexanoyl]-D-erythro-sphingo sine

Product Number: 810209X
Brand: AVANTI

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses: Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company: Avanti Polar Lipids, INC
700 Industrial Park Drive
Alabaster, AL 35007
United States of America

Telephone: (205) 663-2494
Fax: (205) 663-0756

1.4 Emergency telephone number

Emergency Phone #: +1 703-741-5970 / 1800-424-9300 (CHEMTREC)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Acute toxicity, Oral (Category 4), H302
Acute toxicity, Inhalation (Category 3), H331
Acute toxicity, Dermal (Category 4), H312
Skin irritation (Category 2), H315
Eye irritation (Category 2A), H319
Carcinogenicity (Category 2), H351
Reproductive toxicity (Category 2), H361d
Specific target organ toxicity - single exposure (Category 1), Eyes, H370
Specific target organ toxicity - single exposure (Category 3), Central nervous system, H336
Specific target organ toxicity - repeated exposure (Category 1), Liver, Kidney, H372
Acute aquatic toxicity (Category 3), H402

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word: Danger

Hazard statement(s)
H302 + H312: Harmful if swallowed or in contact with skin.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H331 Toxic if inhaled.
H336 May cause drowsiness or dizziness.
H351 Suspected of causing cancer.
H361d Suspected of damaging the unborn child.
H370 Causes damage to organs (Eyes).
H372 Causes damage to organs (Liver, Kidney) through prolonged or repeated exposure.
H402 Harmful to aquatic life.

Precautionary statement(s)
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
P302 + P352 + P312 IF ON SKIN: Wash with plenty of water. Call a POISON CENTER/doctor if you feel unwell.
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P307 + P311 IF exposed: Call a POISON CENTER or doctor/ physician.
P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P362 Take off contaminated clothing and wash before reuse.
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.
P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures
Synonyms : C6-NBD Ceramide

<table>
<thead>
<tr>
<th>Hazardous components</th>
</tr>
</thead>
<tbody>
<tr>
<td>Component</td>
</tr>
<tr>
<td>------------</td>
</tr>
<tr>
<td>Chloroform</td>
</tr>
<tr>
<td>CAS-No.</td>
</tr>
<tr>
<td>EC-No.</td>
</tr>
<tr>
<td>Index-No.</td>
</tr>
</tbody>
</table>

| Methanol | Flam. Liq. 2; Acute Tox. 3; STOT SE 1; H225, H301 + H311 + H331, H370 | 20 - 30 % |
| CAS-No. | 67-56-1 |
| EC-No. | 200-659-6 |
| Index-No. | 603-001-00-X |
| Registration number | 01-2119433307-44-XXXX |
4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11.

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
No data available

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up
Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
For precautions see section 2.2.
7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Recommended storage temperature -25 - -15 °C
Storage class (TRGS 510): 3: Flammable liquids

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chloroform</td>
<td>67-66-3</td>
<td>TWA</td>
<td>10 ppm</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
</tbody>
</table>

Remarks
Central Nervous System impairment
Liver damage
Embryo/fetal damage
Confirmed animal carcinogen with unknown relevance to humans

<table>
<thead>
<tr>
<th>ST</th>
<th>2 ppm</th>
<th>9.78 mg/m³</th>
<th>USA. NIOSH Recommended Exposure Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Potential Occupational Carcinogen</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>See Appendix A</td>
</tr>
</tbody>
</table>

C

<table>
<thead>
<tr>
<th>Value</th>
<th>50 ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>240 mg/m³</td>
</tr>
</tbody>
</table>

USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
The value in mg/m³ is approximate.
Ceiling limit is to be determined from breathing-zone air samples.

<table>
<thead>
<tr>
<th>PEL</th>
<th>2 ppm</th>
<th>9.78 mg/m³</th>
<th>California permissible exposure limits for chemical contaminants (Title 8, Article 107)</th>
</tr>
</thead>
</table>

Methanol 67-56-1 TWA 200 ppm USA. ACGIH Threshold Limit Values (TLV)

<table>
<thead>
<tr>
<th>STEL</th>
<th>250 ppm</th>
<th>USA. ACGIH Threshold Limit Values (TLV)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Value</th>
<th>200 ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>260 mg/m³</td>
</tr>
</tbody>
</table>

USA. NIOSH Recommended Exposure Limits

<table>
<thead>
<tr>
<th>Value</th>
<th>200 ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>260 mg/m³</td>
</tr>
</tbody>
</table>

USA. NIOSH Recommended Exposure Limits

<table>
<thead>
<tr>
<th>Value</th>
<th>250 ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>325 mg/m³</td>
</tr>
</tbody>
</table>

USA. NIOSH Recommended Exposure Limits

<table>
<thead>
<tr>
<th>Value</th>
<th>250 ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>325 mg/m³</td>
</tr>
</tbody>
</table>

USA. NIOSH Recommended Exposure Limits

Potential for dermal absorption

Potential for dermal absorption
### USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>TWA</td>
<td>200 ppm 260 mg/m³</td>
<td>USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants</td>
</tr>
</tbody>
</table>

The value in mg/m³ is approximate.

<table>
<thead>
<tr>
<th>Component</th>
<th>Value</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>1,000 ppm</td>
<td>California permissible exposure limits for chemical contaminants (Title 8, Article 107)</td>
</tr>
</tbody>
</table>

**Skin**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEL</td>
<td>200 ppm 260 mg/m³</td>
<td>California permissible exposure limits for chemical contaminants (Title 8, Article 107)</td>
</tr>
</tbody>
</table>

**Skin**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>STEL</td>
<td>250 ppm 325 mg/m³</td>
<td>California permissible exposure limits for chemical contaminants (Title 8, Article 107)</td>
</tr>
</tbody>
</table>

**Biological occupational exposure limits**

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Parameters</th>
<th>Value</th>
<th>Biological specimen</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>Methanol</td>
<td></td>
<td>15 mg/l</td>
<td>Urine</td>
<td>ACGIH - Biological Exposure Indices (BEI)</td>
</tr>
</tbody>
</table>

**Remarks**

End of shift (As soon as possible after exposure ceases)

### 8.2 Exposure controls

**Appropriate engineering controls**

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

**Personal protective equipment**

**Eye/face protection**

Face shield and safety glasses. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin protection**

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

**Body Protection**

Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Respiratory protection**

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Control of environmental exposure**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

#### 9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Appearance</td>
<td>Form: liquid</td>
</tr>
<tr>
<td>b) Odour</td>
<td>No data available</td>
</tr>
<tr>
<td>c) Odour Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>d) pH</td>
<td>No data available</td>
</tr>
<tr>
<td>e) Melting point/freezing</td>
<td>No data available</td>
</tr>
</tbody>
</table>
point
f) Initial boiling point and boiling range No data available
g) Flash point No data available
h) Evaporation rate No data available
i) Flammability (solid, gas) No data available
j) Upper/lower flammability or explosive limits No data available
k) Vapour pressure No data available
l) Vapour density No data available
m) Relative density 1.35 g/cm³
n) Water solubility No data available
o) Partition coefficient: n-octanol/water No data available
p) Auto-ignition temperature No data available
q) Decomposition temperature No data available
r) Viscosity No data available
s) Explosive properties No data available
t) Oxidizing properties No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.
Contains the following stabiliser(s):
Ethanol (0.5 %)

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
No data available

10.5 Incompatible materials
Strong oxidizing agents

10.6 Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

   Acute toxicity
No data available

   Skin corrosion/irritation
No data available
Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity
IARC: 2B - Group 2B: Possibly carcinogenic to humans (Chloroform)
NTP: RAHC - Reasonably anticipated to be a human carcinogen (Chloroform)
OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA’s list of regulated carcinogens.

Reproductive toxicity
No data available
No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: Not available
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Stomach - Irregularities - Based on Human Evidence
- Chloroform
- Methanol
- Ethanol

12. ECOLOGICAL INFORMATION

12.1 Toxicity
No data available

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Harmful to aquatic life.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.
Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

**DOT (US)**
- UN number: 1992
- Class: 3 (6.1)
- Packing group: III
- Proper shipping name: Flammable liquids, toxic, n.o.s. (Chloroform, Methanol)
- Reportable Quantity (RQ): 12 lbs
- Reportable Quantity (RQ): 10 lbs
- Poison Inhalation Hazard: No

**IMDG**
- UN number: 1992
- Class: 3 (6.1)
- Packing group: III
- Proper shipping name: FLAMMABLE LIQUID, TOXIC, N.O.S. (Chloroform, Methanol)

**IATA**
- UN number: 1992
- Class: 3 (6.1)
- Packing group: III
- Proper shipping name: Flammable liquid, toxic, n.o.s. (Chloroform, Methanol)

15. REGULATORY INFORMATION

**SARA 302 Components**
- Chloroform: CAS-No. 67-66-3, Revision Date 2008-11-03

**SARA 313 Components**
The following components are subject to reporting levels established by SARA Title III, Section 313:
- Chloroform: CAS-No. 67-66-3, Revision Date 2008-11-03
- Methanol: 67-56-1, Revision Date 2007-07-01

**SARA 311/312 Hazards**
- Acute Health Hazard, Chronic Health Hazard:
  - Reportable Quantity: D022 lbs

**Massachusetts Right To Know Components**
- Chloroform: CAS-No. 67-66-3, Revision Date 2008-11-03
- Methanol: 67-56-1, Revision Date 2007-07-01

**Pennsylvania Right To Know Components**
- Chloroform: CAS-No. 67-66-3, Revision Date 2008-11-03
- Methanol: 67-56-1, Revision Date 2007-07-01

**California Prop. 65 Components**
- Which is/are known to the State of California to cause cancer:
  - Chloroform: CAS-No. 67-66-3, Revision Date 2011-09-01

- Which is/are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov:
  - Methanol: 67-56-1, Revision Date 2012-03-16
  - Chloroform: 67-66-3, Revision Date 2011-09-01

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.
Acute Tox.  Acute toxicity
Aquatic Acute  Acute aquatic toxicity
Carc.  Carcinogenicity
Eye Irrit.  Eye irritation
Flam. Liq.  Flammable liquids
H225  Highly flammable liquid and vapour.
H301 + H311 + Toxic if swallowed, in contact with skin or if inhaled.
H331
H302  Harmful if swallowed.
H312  Harmful in contact with skin.
H315  Causes skin irritation.
H319  Causes serious eye irritation.
H331  Toxic if inhaled.
H336  May cause drowsiness or dizziness.
H351  Suspected of causing cancer.
H361d  Suspected of damaging the unborn child.
H370  Causes damage to organs (/$/*_ORGAN_SINGLE$/).
H372  Causes damage to organs (/$/*_ORGAN_REPEAT$/) through prolonged or repeated exposure.
H402  Harmful to aquatic life.
Repr.  Reproductive toxicity
Skin Irrit.  Skin irritation
STOT RE  Specific target organ toxicity - repeated exposure
STOT SE  Specific target organ toxicity - single exposure

HMIS Rating
Health hazard:  2
Chronic Health Hazard:  *
Flammability:  0
Physical Hazard  0

NFPA Rating
Health hazard:  2
Fire Hazard:  0
Reactivity Hazard:  0

Further information
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Preparation Information
Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 5.1  Revision Date: 05/15/2018  Print Date: 11/15/2018